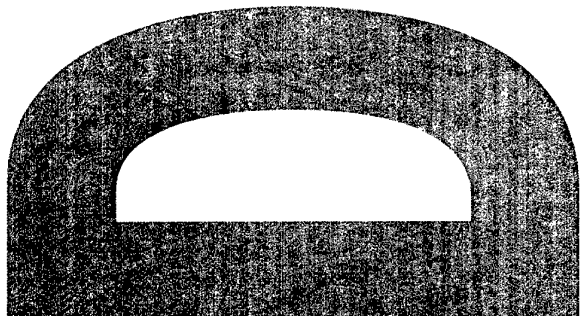**Australian Government**

Department of Defence

Defence Science and
Technology Organisation

The Prototype Automated Research Management System (ARMS)

Paul Prekop, Mark Burnett and
Chris Chapman

DSTO-TN-0540

20040617 036
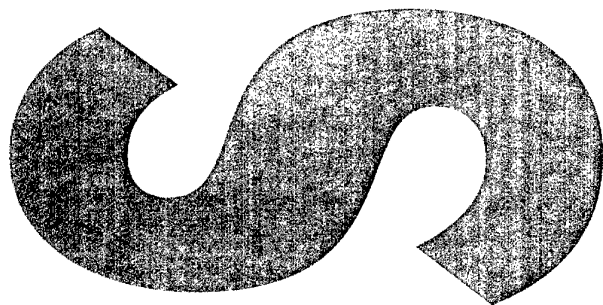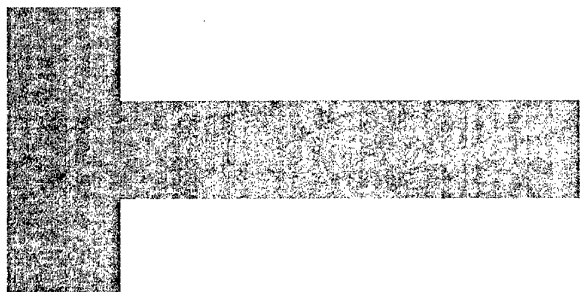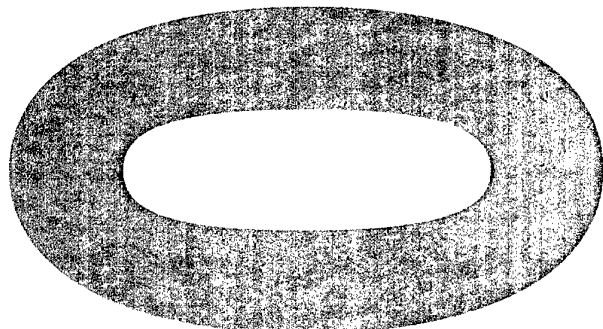
Australian Government

Department of Defence

Defence Science and
Technology Organisation

The Prototype Automated Research Management System (ARMS)

Paul Prekop, Mark Burnett and Chris Chapman

Command and Control Division
Information Sciences Laboratory

ABSTRACT

Automated Research Management System (ARMS) is a knowledge management application designed to address many of the knowledge management problems identified by SmartWays and FASSP's Knowledge Management Review. ARMS supports knowledge management by recording and exposing the knowledge and expertise of DSTO Staff, providing organisation-wide methods for S&T Staff to find and interact with other staff with similar or complementary skills, experiences or interests, and by providing a coherent and organisation-wide R&D corporate memory of current and past DSTO work. This report presents a set of detailed use-cases for the ARMS prototype, and the piloting process that will be used to test and evaluate it.

RELEASE LIMITATION

Approved for public release

AQ F04-09-0996

APPROVED FOR PUBLIC RELEASE

The Prototype Automated Research Management System (ARMS)

Executive Summary

DSTO's Mission is to provide *expert, impartial and innovative application of science and technology to the defence of Australia and its national interests.* The provision of advice and expertise, and even the development of new technology, are all knowledge-based activities; activities that require the collection, creation, use and dissemination of knowledge to answer specific questions, solve specific problems, or develop new technology.

However, recent initiatives such as SmartWays and FASSP's Knowledge Management Review have identified many shortfalls in DSTO's current knowledge management practices and processes. These shortfalls include: difficulty finding staff with particular skills and experience, difficulty describing DSTO's collective expertise and knowledge, lack of a substantial, organisation wide Research and Development corporate memory, and an inability to identify current and past work within particular areas.

The prototype Automated Research Management System (ARMS) described in this report is a knowledge management application aimed at addressing many of these problems. Specifically, ARMS records and exposes the knowledge and expertise of DSTO Scientific and Technical (S&T) Staff, provides organisation-wide methods for S&T Staff to find and interact with other S&T Staff with similar or complementary skills, experiences or interests, and provides a coherent and organisation-wide R&D corporate memory of current and past work.

ARMS will be developed and piloted in two multi-site DSTO divisions. The goal of the pilot process is to elicit the requirements for a DSTO-wide version of an ARMS application and to potentially explore the impacts an ARMS type application has on the knowledge management practises within the pilot divisions. Specifically, the pilot will enable us to:

- Develop a complete and valid set of requirements for an ARMS type application for DSTO;
- Measure the knowledge management impacts an ARMS type application has within the pilot divisions;
- Describe the management and administrative impacts ARMS has within the pilot divisions, as well as give descriptions of how ARMS impacts existing business processes; and
- Describe the technical and data relationships between ARMS and DSTO's existing portfolio of MIS applications.

Contents

1. Introduction

DSTO's Mission is to provide *expert, impartial and innovative application of science and technology to the defence of Australia and its national interests*[1]. The provision of advice and expertise, and even the development of new technology, are knowledge-based activities; activities that require the collection, creation, use and dissemination of knowledge to answer specific questions, solve specific problems, or develop new technology.

However, recent initiatives such as SmartWays and FASSP's 2001 Knowledge Management Review[2] have identified many shortfalls with DSTO's current knowledge management practices and processes, including:

- Lack of an expertise directory, staff difficulty in identifying DSTO experts in particular areas, and difficulty in identifying the interests of DSTO S&T Staff;
- Lack of R&D Corporate Memory, resulting in difficulty in identifying relevant previous DSTO work within particular science, technology and customer domains, and the lack of an ability to capture the successes and failures of past work;
- Difficulty in identifying and describing DSTO's collective expertise and knowledge within particular science, technology and customer domains;
- Difficult in identifying how current DSTO's collective expertise and knowledge is within particular science, technology and customer domains; and
- Difficulty in identifying current and past DSTO work within particular science, technology and customer domains.

This report describes the prototype Automated Research Management System (ARMS). ARMS is a knowledge management application that attempts to address many of the shortfalls of DSTO's current knowledge management practices and processes. The design of the ARMS prototype has been derived from data collected by SmartWays, FASSP's 2001 Knowledge Management Review, and the pilot Knowledge Management Survey.

The key objectives of ARMS are to:

- Record and expose the knowledge and expertise of DSTO S&T Staff;
- Provide organisation-wide methods for S&T Staff to find and interact with other S&T Staff with similar or complementary skills, experiences or interests;
- Provide a coherent and organisation-wide corporate memory of DSTO task work and the products of DSTO task work; and

---

[1] See: http://www.dsto.defence.gov.au/index.html.
[2] P. Prekop and M. Burnett, "Knowledge Management within DSTO – Overview, Framework and Concepts," Defence Science and Technology Organisation (DSTO), Salisbury, SA, discussion paper DSTO-DP-0767, November 2002.

- Provide methods for searching and reporting DSTO S&T Staff's knowledge and expertise in particular areas and DSTO past and current work and outcomes in particular areas.

The list of possible applications of ARMS is considerable. However, some of the more important applications would include:

- Browsing for past (or current) work in particular S&T areas;
- Browsing for past (or current) work for particular defence customers;
- Finding the S&T staff responsible for a particular piece of current work (and talking to them about the work);
- Building a richer understanding of a DSTO Report, by seeing and reviewing the work that led up to it;
- Discovering if an author of an old report has written anything more recent in the area;
- Building a community of staff who share interests or experiences delivering particular kinds of technologies to particular kinds of customers;
- Searching for task managers of current tasks in a specific customer area;
- Identifying all DSTO staff with experiences or interests in particular S&T areas and being able to quickly send them relevant information;
- Searching for S&T staff with experience in applying specific technology within particular defence domains;
- Contacting all S&T staff with expertise in a particular S&T area, so that advice can quickly be offered on a pressing defence issue;
- Generating a summary report of all past DSTO efforts within a defence domain;
- Generating a report of all DSTO publications (internal, external, formal and informal) in a S&T area; and
- Producing an expertise map, showing where DSTO's current expertise lies.

1.1 Conceptual Overview

Conceptually, ARMS supports the management of key DSTO R&D information and the key relationships between this information; this is shown by Figure 1.
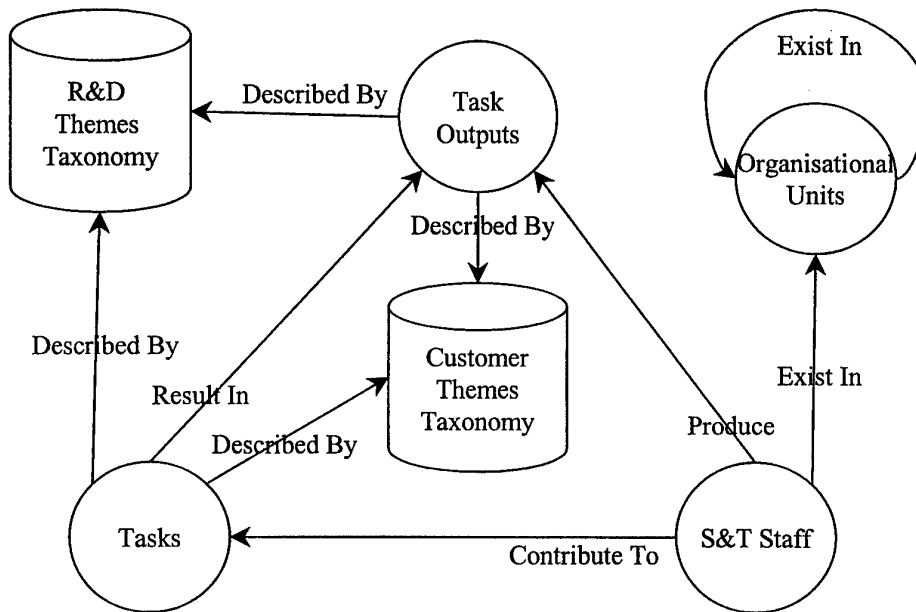
Figure 1: ARMS Conceptual Model.

As shown by Figure 1, the important S&T information within DSTO can be grouped into four main entities:

- *S&T Staff*, who hold experience, insights and understanding that is gained through their education and experience. This knowledge is often tacit, and often difficult to communicate. The most effective means of sharing this knowledge is through interpersonal relationships;
- *Tasks* are a key form of DSTO corporate memory – they act as descriptions and containers of the work DSTO is currently doing, as well as the work DSTO has done in the past;
- *Organisational Units* act as a way of grouping staff and the work they perform. In many ways, organisational units capture where clusters of knowledge exist within DSTO; and
- *Task Outputs* are the specific products, knowledge, scientific discoveries and so on that have been created by DSTO. When combined with task descriptions, Task Outputs form the core of DSTO explicit corporate S&T memory.

All four entities are key parts of DSTO collective knowledge and, as shown by Figure 1, there are strong inter-relationships between each of these components.

3

DSTO's knowledge (in the form of the four key entities) can be described by two key taxonomies – the R&D Themes Taxonomy, which describes what DSTO does in terms of science and technology, and the Customer Themes Taxonomy, which describes what DSTO does in terms of the defence domains in which DSTO works.

Core to ARMS is the automatic generation of web pages for each main entity, and automatically linking the web pages together. The automation ARMS will support, will include:

- Automatically populating S&T Staff home pages with publications, task involvement, contact information, derived experience, and so on;
- Automatically populating Task Home Pages with basic task information, formal publications by the task, staff involvement, and so on;
- Automatically populating Organisational Unit home pages with head of unit contact information, staff list, aggregated unit experience, list of tasks managed by the unit, lists of superior and subordinate units, and so on;
- Automatically linking formal and informal outputs back to relevant S&T Staff and Tasks; and
- Automatically populating Taxonomy Term home pages with lists of relevant S&T Staff, Tasks, and formal and informal outputs that relate to that taxonomy term.

As discussed in Section 5, ARMS is not intended to replace or duplicate the functionality of DSTO's existing Management Information Systems (for example TMIS, or the Personnel System). Rather, ARMS is intended to complement the existing portfolio of Management Information Systems by providing a more holistic and more generally accessible view of DSTO's existing information.

1.2 The ARMS Pilot Process

The major difficulty with the ARMS concept is that it is new. No application with similar scope and functionality has been deployed within DSTO before. As a result, the exact user requirements for ARMS are unclear, as are the likely impacts implementing ARMS will have on DSTO's current knowledge management practices and processes. As a result, a pilot process will be used to elicit the ARMS requirements, and to explore the impact of ARMS.

To elicit the requirements for the ARMS application, the initial ARMS prototype (described in this report) will be developed and deployed as a pilot program within two multi-site DSTO pilot Divisions. The prototype implementation will include real data extracted from DSTO's existing information systems. Feedback on the initial prototype from the users within the Divisions, as well as users external to the Divisions will be gathered. This feedback will be used to shape the final ARMS requirements.

4

Exploring the impact of ARMS on DSTO's current knowledge management practices and processes will be done by looking at the changes in various knowledge management metrics, including social network size, frequency of information sharing, cultural attitudes to sharing, knowledge of DSTO work and so on, after the ARMS prototype has been in use in the pilot Divisions. The knowledge management survey collected baseline data on the various knowledge management metrics; this data describes the Divisions before the introduction of the ARMS prototype. It is hoped that a similar instrument will be used to gather data after ARMS has been used in the pilot Divisions. These two data sets provide a pre and post ARMS implementation view of the pilot Divisions. An analysis of this data will provide some insights into the impact of ARMS on knowledge management within the Divisions.

Specifically the ARMS Pilot Process will deliver:

- Validated and complete requirements for an ARMS type application for DSTO;
- An estimate of the knowledge management impacts (as measured by items on the DSTO KM Survey) ARMS had within the pilot Divisions;
- A description of the management and administrative impacts ARMS had within the pilot Divisions, as well as descriptions of how ARMS impacts existing business processes;
- Detailed descriptions of the technical and data relationships between ARMS and DSTO's existing portfolio of MIS applications; and
- A description of the amount of effort required to populate ARMS with existing DSTO data.

1.3 Impact of ARMS

Like all large and sophisticated information systems, ARMS is likely to incur a management and administrative overhead. However, since ARMS makes use of information held within existing DSTO information systems (see Section 5), and fits within existing business processes (see Section 2) this overhead is likely to be low. The ARMS Pilot Process (described in Section 1.2) will explore the impact of ARMS on the pilot divisions in detail.

ARMS may incur a management and administrative overhead in the following areas:

- The introduction of the Task Publication is likely to impact on the task manager's workload. See Section 2 for more details.
- The need for the on-going maintenance of the taxonomies. While the taxonomies have been created independently of ARMS, they are key to ARMS functionality, and it is likely maintenance of the taxonomies will fall within the scope of ARMS management and administration.
- Impact on the DSTO publication process to include taxonomic descriptions as well as (or as a replacement for) mandatary DEFTEST descriptors.

- Impact on the DSTO external publication process to include taxonomic descriptions on externally published papers (currently many external publications include mandatory keywords) and to include task information (see Section 2)[3].
- It is unlikely ARMS will be able to automatically access and manipulate the unstructured Site and Organisational Unit information held by the DSTO corporate web site (see Section 5). As a result, this information will need to be manually entered and maintained within ARMS.

The impact ARMS may have on individual S&T Staff will vary. The staff and task information core to ARMS will be extracted automatically from existing systems and processes. Hence, the creation of basic staff and task home pages will be automatic, and require no additional effort from S&T Staff. However, ARMS includes the ability to include considerable additional optional and non-core, staff and task information.

It is envisaged that the population of these additional fields will be at the discretion of individual S&T Staff, and/or mandated by individual organisational units. As a result, staff who decide (or who are mandated) to enter information into these fields will incur a small, additional information maintenance overhead.

---

[3] The DSTO library is putting in place processes to capture the full text and metadata of external publications. ARMS will make use of the information captured by this process.

2. Business Processes

A key feature of ARMS is that it fits within DSTO's existing business processes and exploits the information already held within DSTO's existing management information systems. The only changes ARMS requires are to DSTO existing business processes and information systems related to DSTO publishing.

ARMS assumes a new class of publishing outputs will be introduced, the *Task Publication*. The Task Publication is intended to capture less formal, yet important DSTO Outputs that generally don't fit into DSTO's existing publishing framework. Task Publications are intended to provide an additional channel for publication within DSTO; they are not intended to replace existing DSTO publications. Task Publications could include (but are not limited to):

- The slides and notes for major presentations made to clients or external parties;
- Collections of experimental data in various raw formats (for example SPSS data and results files);
- Detailed engineering designs – CAD diagrams, software specifications and the like;
- DSTO developed computer software applications, software libraries or software components; and
- Informal research notes, discussion papers or drafts of formal publications.

The goal of a Task Publication is to quickly make important DSTO outputs and current work in progress available to a wider DSTO audience. As a result, publication of Task Publications will require the approval of only the responsible task manager, and they will be available only via the Task's Home Page.

The second change in the publishing process assumed by ARMS is the recording of Task Number with external publications so that these can be attributed to one or more DSTO tasks. Currently, Task Number is not recorded with the external publication metadata, hence external publications cannot be attributed to tasks.

3. ARMS Users

Users are outside entities (a person or another system) that interact with ARMS; users capture the general descriptions of the entities that will use ARMS, not necessarily specific individuals, or specific roles that will use ARMS. For ARMS, the key users are:

- S&T Information Consumers;
- S&T Information Owners; and
- S&T Information Maintainers.

3.1 S&T Information Consumers

S&T Information Consumers are the various DSTO and non-DSTO staff that will use the information held in ARMS. S&T Information Consumers form the bulk of ARMS users, and will include the following DSTO and Defence staff:

- DSTO S&T staff;
- DSTO Task Managers;
- DSTO Managers (HoG, RL, Chief of Division, Director of a Lab and CDS);
- DSTO Administrators (Personal Assistants, Shop Front Staff and so on);
- Current Task Sponsors and Desk Officers;
- Potential DSTO Task Sponsors and Desk Officers;
- Defence and external users of the S&T information and knowledge produced by DSTO;
- External agencies that DSTO needs to report to from time to time; and
- Other DSTO or Defence staff with access to the Defence Restricted Intranet.

All S&T Information Consumers will have read-only access to the information held in ARMS.

3.2 S&T Information Owners

S&T Information Owners own and are responsible for the information held within ARMS. S&T Information Owners include:

- DSTO S&T Staff who own and are responsible for the information held on their home page;
- Task Managers who own and are responsible for the information held on the home page of the tasks they are responsible for;
- Authors who own and are responsible for the information describing a Task Output; and
- DSTO staff that head various organisational units, who own and are responsible for the information held about their organisational unit. For example, a Head Of Group owns their Group's home page, and is responsible for the information it

contains. A Research Leader owns their Branch's home page, and is responsible for the information it contains.

By default, all S&T Information Owners are able to add, delete, or modify the information they own. Unless otherwise explicitly stated, a S&T Information Owner is the contact person for the information they own. S&T Information Owners can appoint one or more S&T Information Maintainers, described in the next section, to be able to add, delete or modify the information they own.

As discussed in Section 1.1, ARMS is a heavily automated application. Web pages are automatically built and updated based on data collected by DSTO's existing information systems and processes. As a result the workload needed to maintain web pages owned by individuals or organisational units will be very low (see Section 1.3 for a discussion of the impact of ARMS).

3.3 S&T Information Maintainers

S&T Information Maintainers are staff that have been explicitly authorised to add, delete, or modify specific information held within ARMS.

Authorisation to add, delete, or modify specific information held within ARMS is held by the S&T Information Owners. Any staff capable of accessing ARMS can be authorised to act as a S&T Information Maintainer.

4. ARMS Use Cases

The ARMS prototype is described via *use cases* – semi-formal descriptions of how ARMS will behave from a user's perspective. The use cases only describe what ARMS will do, not how ARMS will do it. Key ARMS use cases are described in the following sections.

4.1 Searching ARMS

1. The user navigates to the ARMS Search Page.
2. The user enters/selects the search criteria:
   a. The user selects one or more taxonomy terms from a list;
   b. The user enters one or more free text search terms; or
   c. The user selects one or more taxonomy terms from a list and enters one or more free text search terms.
3. The user selects the ARMS object(s) to be returned by the search:
   a. S&T Staff;
   b. Tasks;
   c. Task Outputs;
   d. Organisational Units; or
   e. All objects.
4. The user starts the search.
5. The system searches for the specified objects (selected in Step 3) that match the search criteria (specified in Step 2). The search criteria entered in Step 2 limit the type of search to: taxonomy terms only, free text only, or both taxonomy terms and free text.
6. The system returns the search results. Only the object(s) selected by Step 4 that match the search criteria are returned. For each returned object, the following information is displayed (underlined fields are links):
   a. S&T Staff – <u>S&T Staff Name</u>, Formal Appointment (if applicable), <u>Organisational Unit</u>;
   b. Tasks – <u>Task Number</u>, Task Name, <u>Task Manager Name</u>, Start Date, and Termination Date (if the task has been terminated, nothing if the task is ongoing);
   c. Task Outputs – <u>Output Name</u>, <u>Author Name</u> (repeating for each Output Author), Publication Details (dependent on the publication type); or
   d. Organisational Units – <u>Organisational Unit Name</u>, DSTO Site.
7. If the user clicks on:
   a. S&T Staff Name, Task Manager Name, or Author Name – the S&T Staff Member's Home Page is displayed;
   b. A Task Number – the Task's Home Page is displayed;
   c. An Output Name – the Output's Home Page is displayed; or
   d. An Organisational Unit Name – the Organisational Unit's home page is displayed.

Alternative: No Matches.

- If at Step 5 the system finds no matching objects, it returns a *No Match Found* page and lists the reason(s) why no match was found.

Alternative: Task Manager or Author is not a S&T Staff member.

- If at Step 7a the Task Manager or Author is not a S&T Staff member, the *Non-DSTO Staff Member Details* page is displayed.

4.2 Browsing for S&T Staff Members

1. The user navigates to the Browse S&T Staff Page.
2. The system displays a list of S&T Staff held by ARMS. The list is alphabetically ordered by S&T Staff Surname. For each S&T Staff Member the following information is displayed (underlined fields are links):
   a. <u>S&T Staff Name</u>, Appointment (if applicable), <u>Organisational Unit</u>.
3. If the user clicks on:
   a. S&T Staff Name – the S&T Staff Member's Home Page is displayed; or
   b. An Organisational Unit Name – the Organisational Unit's Home page is displayed.

4.3 Browsing for Tasks

1. The user navigates to the Browse Tasks Page.
2. The system displays a list of Tasks held by ARMS. The list is alphabetically ordered by Task Name and the user can choose what tasks are displayed on the list. Choosing to show a different set of tasks on the task list causes the system to update the list of tasks. The user can choose to show:
   a. All Tasks – the list will show all tasks recorded in ARMS. This is the default view;
   b. Current Tasks – the list will show only current (ie, not terminated tasks); or
   c. Completed Tasks – the list will show only completed tasks.
3. For each task shown by the system, the following information is displayed (underlined fields are links):
   a. <u>Task Number</u>, Task Name, <u>Task Manager Name</u>, Start Date, and Termination Date (if the task has been terminated, nothing if the task is ongoing).
4. If the user clicks on:
   a. A Task Number – the Task's Home Page is displayed; or
   b. A Task Manager Name – the S&T Staff Member's Home Page is displayed.

Alternative: A Task view is empty.

- If at Step 2 the user chooses a view that contains no tasks (eg, chooses to see completed tasks, yet there are no completed tasks held in ARMS), the system

will display an empty task list and show a simple explanation for the empty task list.

Alternative: Task Manager is not a S&T Staff member.
- If at Step 4b the Task Manager is not a S&T Staff member, the *Non-DSTO S&T Staff Member Details* page is displayed.

4.4 Browsing for Task Outputs

1. The user navigates to the Browse for Task Outputs Page.
2. The system displays a list of Task Outputs held by ARMS. The list is ordered alphabetically by Task Output name and the user can choose what Task Outputs are displayed on the list. Choosing to show a different set of Task Outputs causes the system to update the Task Output list. The user can choose to show:
   a. All Task Outputs – the list shows all Task Outputs recorded by ARMS. This is the default view;
   b. Recent Task Outputs – the list shows only Task Outputs that have recently been entered into ARMS;
   c. Task Outputs of a Specific Type – the list will only show Outputs of that specified type, for example, DSTO Reports, Conference Papers, Computer Code, and so on; or
   d. Task Outputs from an Organisational Unit – the list will only show Task Outputs related to tasks managed by the specified Organisational Unit.
3. The following information is displayed for each Task Output displayed by the system (underlined fields are links):
   a. <u>Task Output Name</u>, <u>Author Name</u> (repeating for each Task Output Author), Publication Details (dependent on the publication type).
4. If the user clicks on:
   a. Task Output Name – the Task Output's Home Page is displayed; or
   b. An Author Name – the S&T Staff Member's Home Page is displayed.

Alternative: Author is not a S&T Staff member.
- If at Step 4b the Author is not a S&T Staff member, the *Non-DSTO S&T Staff Member Details* page is displayed.

4.5 Browsing for Organisational Units

1. The user navigates to the Browse for Organisational Units Page.
2. The system displays a list of Organisational Units recorded by ARMS. The list is ordered alphabetically by Organisational Unit Name, and for each Organisational Unit the following information is displayed (underlined fields are links):
   a. <u>Organisational unit name.</u>
3. If the user clicks on

a. Organisational Unit Name – the Organisational Unit's Home Page is displayed.

4.6 Browsing for Taxonomies Terms

1. The user navigates to the Browsing via Taxonomies Page.
2. The user selects the taxonomy to browse.
3. The system displays the list of terms held in the taxonomy. The list is ordered alphabetically by term. For each taxonomy term, the following information is displayed (underlined fields are links):
   a. Term – <u>Term Name</u>, Term Description.
4. If the user clicks on:
   a. Term – the Taxonomy Term Home Page is displayed.

4.7 Displaying a S&T Staff Member's Home Page

1. The user navigates to the S&T Staff Member's Home Page (see Sections 4.1 and 4.2).
2. The system displays the following information (underlined fields are links):
   a. Basic Details – S&T Staff Name, Photo, Postal Address, Physical Address, <u>DSTO Site</u>, Phone Number, Fax Number and E-mail Address;
   b. Education (Optional) – Academic Qualification Abbreviations, Education Narrative;
   c. Professional Membership (Optional) – Membership Abbreviations, Membership Narrative;
   d. DSTO Roles/Responsibilities (Optional) – Simple list of DSTO Roles/Responsibilities;
   e. Organisational Unit Details – <u>Group</u> (Organisational Unit Name), <u>Branch</u> (Organisational Unit Name), <u>Division</u> (Organisational Unit Name), <u>Laboratory</u> (Organisational Unit Name);
   f. Experience Narrative (Optional) – Text description of work experience within DSTO and outside of DSTO;
   g. Experienced In Description (Opt Out[4]) – <u>R&D Themes Taxonomy Terms</u>, <u>Customer Themes Taxonomy Terms</u>;
   h. Interested In Narrative (Optional) – Text description of Staff Member's interests;
   i. Interested In Descriptions (Optional) – <u>R&D Themes Taxonomy Terms</u>, <u>Customer Themes Taxonomy Terms</u>;
   j. Task Involvement – <u>Task Number</u>, Task Name, <u>Task Manager Name</u>, Start Date and Termination Date (if the task has been terminated, nothing if the task is ongoing); and

---

[4] ARMS will populate this field based on information about the staff member; past task experience, publications and other outputs and so on. Staff members have the ability to choose not to show individual taxonomy terms publicly, that is to *Opt Out* of this field.

    k. Task Outputs – <u>Task Output Name</u>, <u>Author Name</u> (repeating for each Task Output Author) and Publication Details (dependent on the publication type).

3. If the user clicks on:
    a. DSTO Site – the DSTO Site's Home Page is displayed;
    b. Organisational Unit Name – the Organisational Unit's Home Page is displayed;
    c. R&D Themes Taxonomy Terms – the R&D Themes Taxonomy Terms Home Page is displayed;
    d. Customer Themes Taxonomy Terms – the Customer Themes Taxonomy Terms Home Page is displayed;
    e. Task Number – the Task's Home Page is displayed;
    f. Task Manager's Name or Task Author's Name – the S&T Staff Member's Home Page is displayed; or
    g. Task Output Name – the Task Output's Home Page is displayed.

Alternative: Task Manager or Author is not a S&T Staff member.
- If at Step 3f the Task Manager or Author is not a S&T Staff member, the *Non-DSTO S&T Staff Member Details* page is displayed.

4.8 Displaying a Task's Home Page

1. The user navigates to the Task's Home Page (see Sections 4.1 and 4.3).
2. The system displays the following information (underlined fields are links):
    a. Basic Details – Task Name, Task Number, Short Description or Abstract, Status (Planned, Current, Completed), Start Date or Planned Start Date, Termination Data or Proposed Termination Date;
    b. Task Manager – <u>Task Manager Name</u>, <u>Group</u>;
    c. Organisational Unit Hosting Task – <u>Organisational Unit Name</u>;
    d. Task Description – <u>R&D Themes Taxonomy Terms</u>, <u>Customer Themes Taxonomy Terms</u>;
    e. Client Request (Optional) – What Defence wants from the task;
    f. Background (Optional) – Text describing the task in more detail;
    g. Methodologies/Processes (Optional) – Descriptions of the methodologies to be used/the processes to be used;
    h. Task Outcomes (Optional) – What Defence expects to get from the task/what the task will Deliver to defence;
    i. Staff Involved in Task – <u>Staff Name</u>, <u>Group</u>; and
    j. Outputs – <u>Output Name</u>, <u>Author Name</u> (repeating for each Output Author), Publication Details (dependent on the publication type).
3. If the user clicks on:
    a. Task Manager's Name, Staff Name or Author's Name – the S&T Staff Member's Home Page is displayed;
    b. Organisational Unit Name (Group) – the Organisational Unit's Home Page is displayed;

  c. R&D Themes Taxonomy Terms – the R&D Themes Taxonomy Terms Home Page is displayed;

  d. Customer Themes Taxonomy Terms – the Customer Themes Taxonomy Terms Home Page is displayed; or

  e. Output Name – the Outputs Home Page is displayed.

Alternative: Task Manager, Name or Authors are not S&T Staff member(s).
- If at Step 3a the Task Manager, Staff or Authors are not S&T Staff member(s), the *Non-DSTO S&T Staff Member Details* page is displayed.

4.9 Displaying a Task Output's Home Page

1. The user navigates to the Task Output's Home Page (see Sections 4.1 and 4.4).

2. The system displays the following information (underlined fields are links):

  a. Basic Details – Task Output Name, Description/Abstract, Publication Type (one of a standard set), Publication Details (dependent on the publication type);

  b. Authors – <u>Author Name</u>, <u>Group</u>;

  c. Description – <u>R&D Themes Taxonomy Terms</u>, <u>Customer Themes Taxonomy Terms</u>;

  d. Task Attributed To – <u>Task Number</u>, Task Name, <u>Task Manager Name</u>, Start Date and Termination Date (if the task has been terminated, nothing if the task is ongoing); and

  e. File Information – <u>File Name</u>, Size, Type/Extension, Last Modified Date (obtained from file system when file is first uploaded) and Uploaded Date.

3. If the user clicks on:

  a. Author Name, Task Manager's Name – the S&T Staff Member's Home Page is displayed;

  b. Organisational Unit Name (Group) – the Organisational Unit's Home Page is displayed;

  c. Task Number – the Task's Home Page is displayed;

  d. R&D Themes Taxonomy Terms – the R&D Themes Taxonomy Terms Home Page is displayed;

  e. Customer Themes Taxonomy Terms – the Customer Themes Taxonomy Terms Home Page is displayed; or

  f. File Name – the standard browser view/download process is started.

Alternative: The Authors or Task Manager are not S&T Staff members.
- If at Step 3a the Authors or Task Manager are not S&T Staff members, the *Non-DSTO S&T Staff Member Details* page is displayed.

4.10 Displaying an Organisational Unit's Home Page

1. The user navigates to the Organisational Unit's Home Page (see Sections 4.1 and 4.5).

2. The system makes the following information available (underlined fields are links):

    a. Description – Full Name, Abbreviation, Short Description;

    b. Head of Unit – <u>Name</u>, Formal Appointment (if applicable), Phone Number, Fax Number, e-mail address, <u>DSTO Site</u>;

    c. Unit Contact Information (Optional) – <u>Contact Name</u>, Formal Appointment (if applicable), phone number, fax number, e-mail address, physical address, postal address, Role/Reason to Contact;

    d. Intellectual Description/Work Experience – <u>R&D Themes Taxonomy Terms</u>, <u>Customer Themes Taxonomy Terms</u>;

    e. Objective (Optional) – Aim/Objective of the unit;

    f. Mission (Optional) – Mission of the unit;

    g. Staff – <u>Staff Name</u>, Formal Appointment (if applicable), Phone Number, Fax Number, e-mail address, <u>DSTO Site</u>;

    h. Task Attributed To – <u>Task Number</u>, Task Name, <u>Task Manager Name</u>, Start Date and Termination Date (if the task has been terminated, nothing if the task is ongoing);

    i. Superior Units – <u>Unit Name(s)</u>; and

    j. Subordinate Units – <u>Unit Name(s)</u>.

3. If the user clicks on:

    a. Head of Unit, Unit Contact, Staff Name, Task Manager Name – the S&T Staff Member's Home Page is displayed;

    b. DSTO Site – the relevant DSTO Site page is displayed

    c. R&D Themes Taxonomy Terms – the R&D Themes Taxonomy Terms Home Page is displayed;

    d. Customer Themes Taxonomy Terms – the Customer Themes Taxonomy Terms Home Page is displayed;

    e. Task Number – the Task's Home Page is displayed; or

    f. Organisational Unit Name (Group Name) – the Organisational Unit's Home Page is displayed.

Alternative: At Top Level Unit.

- If at Step 2i the unit being displayed is the top-level unit, no superior unit information is displayed.

Alternative: Head of Unit, Unit Contact, Staff, or Task Manager are not S&T Staff member(s).

- If at Step 3a the Head of Unit, Unit Contact, Staff Name or Task Manager Name is not a S&T Staff member, the *Non-DSTO S&T Staff Member Details* page is displayed.

4.11 Displaying a Taxonomy Term Home Page

1. The user navigates to the Taxonomy Term Home Page (see Sections 4.1 and 4.6).

2. The system displays the following information (underlined items are links):

a. Basic Details – Description of the taxonomy term, references defining Taxonomy Term;

b. Messaging E-mail address – the unique e-mail address to use to post a message to this taxonomy term via e-mail;

c. Staff with Experience – <u>Staff Name</u>, Formal Appointment (if applicable), <u>Group</u>;

d. Staff with Interest – <u>Staff Name</u>, Formal Appointment (if applicable), <u>Group</u>;

e. Task Outputs – <u>Output Name</u>, <u>Author Name</u>, (repeating for each Output Author), Publication Details (dependent on the publication type);

f. Relevant Tasks – <u>Task Number</u>, Task Name, <u>Task Manager Name</u>, Start Date and Termination Date (if the task has been terminated, nothing if the task is ongoing); and

g. Organisational Units – <u>Organisational Unit Name.</u>

3. If the user clicks on:

a. Staff Name, Author Name, Task Manager Name – the S&T Staff Member's Home Page is displayed;

b. Task Output Name – the Task Output's Home Page is displayed;

c. Task Number – the Task's Home Page is displayed; or

d. Organisational Unit Name (Group Name) – the Organisational Unit's Home Page is displayed.

Alternative: Staff Name, Author or Task Manager is not S&T Staff.

- If at Step 3a Staff Name, Author or Task Manager is not a S&T Staff member, the *Non-DSTO S&T Staff Member Details* page is displayed.

4.12 Modifying a S&T Staff Member's Home Page

1. The user navigates to a S&T Staff Member's home page (see Sections 4.1 and 4.2).

2. The user indicates that they want to modify this page.

3. The system prompts for user name and password.

4. The user enters their user name and password.

5. The system authenticates the user, via their user name and password, as being the S&T Information Owner for this information, or as being a S&T Information Maintainer for this information.

6. The system displays the following modifiable elements and allows the user to enter, modify or delete data associated with each element:

a. Education (Optional) – Academic Qualification Abbreviations, Education Narrative;

b. Professional Membership (Optional) – Membership Abbreviations, Membership Narrative;

c. DSTO Roles/Responsibilities (Optional) – Simple list of DSTO Roles/Responsibilities;

d. Experience Narrative (Optional) – Text description of work experience within DSTO and outside of DSTO;

  e. Experienced In Description (Opt Out[5]) – R&D Themes Taxonomy Terms, Customer Themes Taxonomy Terms;

  f. Interested In Narrative (Optional) – Text description of Staff Member's interests; and

  g. Interested In Descriptions (Optional) – R&D Themes Taxonomy Terms, Customer Themes Taxonomy Terms.

7. The user makes changes to the modifiable elements on the page.

8. The user chooses to commits the changes.

9. The system updates the last modified date, last modified time, and last modified by fields to reflect the current date, time and user, and commits the changes.

10. The system displays the updated S&T Staff Member Home Page to the user.

Alternatives: Not an authorised User

- If at Step 5 the user is not authorised to modify the page the system displays a message to the user and gives the user the option to return to the page or contact ARMS administrators.

4.13 Modifying a Task's Home Page

1. The user navigates to a Task's Home Page (see Sections 4.1 and 4.3).

2. The user indicates that they want to modify this page.

3. The system prompts for user name and password.

4. The user enters their user name and password.

5. The system authenticates the user, via their user name and password, as being the S&T Information Owner for this information or as being a S&T Information Maintainer for this information.

6. The system displays the following modifiable elements and allows the user to enter, modify or delete data associated with each element:

  a. Client Request (Optional) – What Defence wants from the task;

  b. Background (Optional) – Text describing the task in more detail;

  c. Methodologies/Processes (Optional) – Descriptions of the methodologies to be used/the processes to be used; and

  d. Task Outcomes (Optional) – What defence expects to get from the task/what the task will deliver to defence.

7. The user makes changes to the modifiable elements on the page.

8. The user chooses to commits the changes.

9. The system updates the last modified date, last modified time, and last modified by fields to reflect the current date, time and user, and commits the changes.

10. The system displays the updated Task's Home Page to the user.

---

[5] ARMS will populate this field based on information about the staff member; past task experience, publications and other outputs and so on. Staff members have the ability to choose not to show individual taxonomy terms publicly, that is to *Opt Out* of this field.

Alternatives: Not an authorised User

- If at Step 5 the user is not authorised to modify the page, the system displays a message to the user and gives the user the option to return to the page or contact ARMS administrators.

4.14 Adding a new Task Output

1. The user navigates to attributed Task's Home Page (see Sections 4.1 and 4.3).
2. The user indicates they want to add a new Task Output to a task.
3. The system prompts for user name and password.
4. The user enters their user name and password.
5. The system authenticates the user, via their user name and password, as being the S&T Information Owner for this information or as being a S&T Information Maintainer for this information.
6. The system allows the user to enter the following metadata about the Output being added:
   a. Task Output Name;
   b. Task Output Description/Abstract;
   c. Publication Type – {Book Section, Journal Paper, Conference Paper, DSTO Report, Magazine Article, Thesis, Computer Program, Design, Experimental Data, Raw Data, Artwork/Image, Other}
   d. Authors – Title, First Name, Surname, Group; and
   e. Description – R&D Themes Taxonomy Terms, Customer Themes Taxonomy Terms.
7. The user then selects the file(s) to be uploaded to ARMS. ARMS collects the following information from the file system/upload process:
   a. File Information – File Name, Size, Type/Extension, Last Modified Date (obtained from file system when file is first uploaded) and Uploaded Date.
8. The user commits the addition of the new Task Output and associated files to ARMS.
9. The system updates the last modified date, last modified time and last modified by fields to reflect the current date, time and user, and commits the changes.
10. The system displays the updated Task Home Page to the user.

Alternatives: Not an authorised User

- If at Step 5 the user is not authorised to modify the page, the system displays a message to the user and gives the user the option to return to the page or contact ARMS administrators.

4.15 Modifying a Task Output

1. The user navigates to a Task Outputs Home Page (see Sections 4.1 and 4.4).
2. The user indicates they want to modify the Task Outputs Information.
3. The system prompts for user name and password.
4. The user enters their user name and password.

5. The system authenticates the user, via their user name and password, as being the S&T Information Owner for this information or as being a S&T Information Maintainer for this information.

6. The system displays the following metadata about the Output to the user and allows one or more elements to be modified or deleted:
   a. Task Output Name;
   b. Task Output Description/Abstract;
   c. Authors – Title, First Name, Surname, Group;
   d. Publication Type – {Book Section, Journal Paper, Conference Paper, DSTO Report, Magazine Article, Thesis, Computer Program, Design, Experimental Data, Raw Data, Artwork/Image, Other};
   e. Publication Type Specific Information Fields. Each publication type will have a unique set of metadata associated with it;
   f. Description – R&D Themes Taxonomy Terms, Customer Themes Taxonomy Terms; and
   g. Task Attribution – Task Number.

11. The System presents the user with a list of files that are held for this Task Output. For each file, the following information is displayed:
    a. File Information – File Name, Size, Type/Extension, Last Modified Date (obtained from file system when file is first uploaded) and Uploaded Date.

12. The user can delete or replace any of the listed files or add a new file.

13. The user makes the changes to the Task Output and uploads associated files to ARMS.

14. The system updates the last modified date, last modified time and last modified by fields to reflect the current date, time and user, and commits the changes.

15. The system displays the updated Task Output Home Page to the user.

Alternatives: Not an authorised User
- If at Step 5 the user is not authorised to modify the page, the system displays a message to the user and gives the user the option to return to the page or contact ARMS administrators.

4.16 Modifying an Organisational Unit Page

1. The user navigates to an Organisational Unit's Home Page (see Sections 4.1 and 4.5).

2. The user indicates that they want to modify this page.

3. The system prompts for user name and password.

4. The user enters their user name and password.

5. The system authenticates the user, via their user name and password, as being the S&T Information Owner for this information or as being a S&T Information Maintainer for this information.

6. The system displays the following modifiable elements, and allows the user to enter, modify or delete data associated with each element:

a. Unit Contact Information (Optional) – <u>Name</u>, Formal Appointment (if applicable), phone number, fax number, e-mail address, physical address, postal address, Role/Reason to Contact;

b. Objective (Optional) – Aim/Objective of the unit; and

c. Mission (Optional) – Mission of the unit.

7. The user makes changes to the modifiable elements on the page.

8. The user confirms the changes.

9. The system updates the last modified date, last modified time and last modified by fields to reflect the current date, time and user, and confirms the changes.

10. The system displays the updated Organisational Unit's Home Page to the user.

Alternatives: Not an authorised User

- If at Step 5 the user is not authorised to modify the page, the system displays a message to the user and gives the user the option to return to the page or contact ARMS administrators.

4.17 Viewing And Posting Messages

1. The user navigates to a Taxonomy Term Home Page (see Sections 4.1 and 4.6).

2. The user indicates that they want to view messages posted to this Taxonomy Term.

3. The system prompts for user name and password.

4. The user enters their user name and password.

5. The system authenticates the user, via their user name and password, as being a S&T Information Consumer.

6. The system displays a threaded list of messages the user hasn't yet read. The list is ordered by date and time the messages were posted. The user can then choose to:

a. Mark a particular unread message as read – the system updates the message to show the particular message as read;

b. Mark all unread messages as read – the system updates the message list to show all unread message as read;

c. Collapse Message List – the system updates the list to show only top-level messages, that is only messages that are not replies to previously posted messages;

d. Reply to an existing message, or

e. Post a new Message to this list.

7. The following information is displayed for each message on the message list (underlined fields are links):

a. <u>Message From</u>, <u>Message Subject</u>, Date and Time Posted, top four lines of the message.

8. If the user chooses to post a new message, Step 6d, the system displays the New Message form, which contains the following fields:

a. Message Subjects, Message Text.

9. If the user clicks on:

a. Message From – the S&T Staff Member's Home Page is displayed; or

b. Message Subject – the Message text is displayed.

10. If the user chooses to display the message, Step 9b, the user can also reply to this message. The system displays the Reply To Message form, which contains the following fields:

a. Message Subject, Message Text.

11. The user can then choose to send their new message or their reply to an existing message.

12. The system then accepts the new message or reply, and re-displays the message list to the user.

Alternatives: Not an authorised User

- If at Step 6d and 6e the user is not authorised to post a new message or reply to an existing message, the system displays a message to the user and gives the user the option to return to the page or contact ARMS administrators.

Alternative: Message From is not DSTO S&T Staff Member

- If at Step 5a, the Message has not been posted by a S&T Staff Member, the *Non-DSTO S&T Staff member Details* page is displayed.

4.18 Messaging Preferences

1. The user navigates to a Taxonomy Term Home Page (see Sections 4.1 and 4.6).

2. The user indicates that they want to modify how they receive messages from this taxonomy term.

3. The system prompts for user name and password.

4. The user enters their user name and password.

5. The system authenticates the user, via their user name and password, as being a S&T Information Consumer.

6. The system then displays the following options to the user:

a. Receive no messages from this Taxonomy Term;

b. Receive each message via e-mail;

c. Receive a daily digest of all messages posted each day via e-mail; or

d. Receive a weekly digest of all messages posted each week via e-mail.

7. The user indicates their preference to the system.

8. The system confirms the user's preference.

5. Interactions with Existing Systems

A key feature of ARMS is that it makes extensive use of data held within existing DSTO management information systems (MIS). As a result, ARMS requires very little additional information to be collected.

The following table shows the interactions between ARMS and the existing MIS Systems.

Tabl e 1: Relationship between ARMS and Existing DSTO and Defence Information Systems.

Existing MIS System	Read Data	Write Data	Data Description
Task Management Information System (TMIS).	Y	N	Task Information used to populate the ARMS Task Object.
Working Time Expenditure (WTE).	Y	N	Data describing the relationship between S&T Staff and the DSTO Tasks they have contributed to.
DSTO/Defence Personnel Systems.	Y	N	Basic S&T Staff information – Name, e-mail address and so on. *Staff Photo is not held.*
S&T Publications Database.	Y	N	DSTO Public Release Reports' metadata and full text (as PDF). The repository holds over five years worth of public release reports. External publication metadata. This collection is incomplete. *Link to task is not held.*
Defence Language System (DLS). *NOTE: DLS is a not a DSTO owned application.*	Y	N	Taxonomy information needed to describe the ARMS objects.

In addition to the systems shown in Table 1, ARMS also includes data about each DSTO organisational unit (eg, group, branch, division and laboratory). While this data is currently not held explicitly within an information system, the current (corporate communications supported) DSTO Intranet implicitly includes the DSTO structure, as well as considerable detail about each organisational unit. This information can be imported into ARMS.

6. Development Process

The development of the pilot ARMS application will be incremental, with the key features added over several development stages. The following table lists the use cases/functions and order in which they will be developed.

Table 2: Use Case/Feature Development Stage.

Stage	User Case/Feature
1	• ARMS Data Base. • Links to existing Data Sources. • Basic data manipulation functions.
2	• Browsing for S&T Staff Members (see Section 4.2). • Browsing for Tasks (see Section 4.3). • Browsing for Output Objects (see Section 4.4). • Browsing for Organisational Units (see Section 4.5). • Browsing for Taxonomies Terms (see Section 4.6). • Displaying a S&T Staff Member's Home Page (see Section 4.7). • Displaying a Task's Home Page (see Section 4.8). • Displaying an Output's Home Page (see Section 4.9). • Displaying an Organisational Unit's Home Page (see Section 4.10). • Displaying a Taxonomy Term Home Page (see Section 4.11).
3	• Searching ARMS (See Section 4.1).
4	• Modifying a S&T Staff Member's Home Page (see Section 4.12). • Modifying a Task's Home Page (see Section 4.13). • Modifying an Organisational Unit Page (see Section 4.16).
5	• Adding a new Task Output (see Section 4.14). • Modifying an Task Output (see Section 4.15).
6	• Viewing And Posting Messages (Section 4.17). • Messaging Preferences (Section 4.18). • Section 4.1.1, point 2.b.

Notes:
- Development Stage 1 builds the basic database infrastructure needed by ARMS, and develops the links between ARMS and the existing information systems applications it extracts data from; and
- Development Stages 5 and 6 may be dropped, subject to time constraints.

7. Design Constraints

The key design constraint for ARMS is that the user component of ARMS (the description of ARMS given in Section 4) is accessible as a web-based application from anywhere within the Defence Restricted Intranet.

Specifically, ARMS:

- Must be available to any user able to access the Defence Restricted Intranet;
- Must be usable with the current DSTO/Defence standard web browser; and
- Must not require additional end-user software (outside of the standard software available within DSTO/Defence standard desktop computing environment) to be installed to support any of the features described in Section 4.

DISTRIBUTION LIST

The Prototype Automated Research Management System (ARMS)

Paul Prekop, Mark Burnett and Chris Chapman

AUSTRALIA

DEFENCE ORGANISATION

Task Sponsor
Heather Layton (MSCIS), 1 copy

S&T Program
Chief Defence Scientist
FAS Science Policy   shared copy
AS Science Corporate Management
Director General Science Policy Development
Counsellor Defence Science, London (Doc Data Sheet)
Counsellor Defence Science, Washington (Doc Data Sheet)
Scientific Adviser to MRDC Thailand (Doc Data Sheet)
Scientific Adviser Joint, 1 copy
Navy Scientific Adviser (Doc Data Sheet and distribution list only)
Scientific Adviser - Army (Doc Data Sheet and distribution list only)
Air Force Scientific Adviser, 1 copy
Scientific Adviser to the DMO M&A, (Doc Data Sheet and distribution list only)
Scientific Adviser to the DMO ELL, (Doc Data Sheet and distribution list only)
Director Trials, 1 copy

Chief Command & Control Division, (Doc Data Sheet)
Research Leader Command & Intelligence Environments Branch, 1copy
Research Leader Military Information Enterprise Branch, 1 copy
Research Leader Theatre Operations Analysis Branch, (Doc Data Sheet)
Head Virtual Enterprises, (Doc Data Sheet)
Head Systems Simulation and Assessment, (Doc Data Sheet)
Head Theatre Operations Analysis, (Doc Data Sheet)
Head Intelligence Analysis, (Doc Data Sheet)
Head Human Systems Integration, (Doc Data Sheet)
Head C2 Australian Theatre, (Doc Data Sheet)
Head HQ Systems Experimentation, (Doc Data Sheet)
Head Information Exploitation, (Doc Data Sheet)
Head Information Systems, 1 copy
Cherylne Fleming (DSIAM), 1 copy
Jimmy Hafesjee (DDSC), 1 copy
Catherine Hunt (MLIS), 1 copy

Philip Jones, 1 copy
Paul Prekop, 2 copies
Mark Burnett, 8 copies
Chris Chapman, 2 copies
Publications and Publicity Officer, C2D/EOC2D , 1 shared copy

DSTO Library and Archives
Australian Archives, 1 copy
Library Canberra , 1 copy

Capability Systems Staff
Director General Maritime Development (Doc Data Sheet)
Director General Aerospace Development (Doc Data Sheet)
Director General Information Capability Development (Doc Data Sheet)

Office of the Chief Information Officer
Deputy CIO, (Doc Data Sheet)
Director General Information Policy and Plans, (Doc Data Sheet)
AS Information Structures and Futures, (Doc Data Sheet)
AS Information Architecture and Management, (Doc Data Sheet)
Director General Australian Defence Simulation Office, (Doc Data Sheet)

Strategy Group
Director General Military Strategy, (Doc Data Sheet)
Director General Preparedness, (Doc Data Sheet)

HQAST
SO (Science) (ASJIC) , (Doc Data Sheet)

Navy
Director General Navy Capability, Performance and Plans,
    Navy Headquarters, (Doc Data Sheet)
Director General Navy Strategic Policy and Futures,
    Navy Headquarters, (Doc Data Sheet)

Air Force
SO (Science) - Headquarters Air Combat Group, RAAF Base, Williamtown
NSW 2314, (Doc Data Sheet & Exec Summary)

Intelligence Program
DGSTA Defence Intelligence Organisation, 1 copy
Manager, Information Centre, Defence Intelligence
    Organisation, 1 (PDF version)
Assistant Secretary Corporate, Defence Imagery and
Geospatial Organisation , (Doc Data Sheet)

Defence Materiel Organisation
  Head Airborne Surveillance and Control, (Doc Data Sheet)
  Head Aerospace Systems Division, (Doc Data Sheet)
  Head Electronic Systems Division, (Doc Data Sheet)
  Head Maritime Systems Division, (Doc Data Sheet)
  Head Land Systems Division, (Doc Data Sheet)
  Head Industry Division, (Doc Data Sheet)
  Chief Joint Logistics Command, (Doc Data Sheet)
  Management Information Systems Division, (Doc Data Sheet)
  Head Materiel Finance, (Doc Data Sheet)

Defence Libraries
  Library Manager, DLS-Canberra(Doc Data Sheet)
  Library Manager, DLS - Sydney West (Doc Data Sheet)

UNIVERSITIES AND COLLEGES
  Australian Defence Force Academy
    Library, 1 copy
    Head of Aerospace and Mechanical Engineering, 1 copy
  Hargrave Library, Monash University (Doc Data Sheet)
  Librarian, Flinders University, 1 copy

OTHER ORGANISATIONS
  National Library of Australia, 1 copy
  NASA (Canberra), 1 copy

<div align="center">

OUTSIDE AUSTRALIA

</div>

INTERNATIONAL DEFENCE INFORMATION CENTRES
  US Defense Technical Information Center, 2 copies
  UK Defence Research Information Centre, 2 copies
  Canada Defence Scientific Information Service, e-mail link to pdf
  NZ Defence Information Centre, 1 copy

ABSTRACTING AND INFORMATION ORGANISATIONS
  Library, Chemical Abstracts Reference Service, 1 copy
  Engineering Societies Library, US, 1 copy
  Materials Information, Cambridge Scientific Abstracts, US, 1 copy
  Documents Librarian, The Center for Research Libraries, US, 1 copy

SPARES (5 copies)

Total number of copies: 47

DEFENCE SCIENCE AND TECHNOLOGY ORGANISATION DOCUMENT CONTROL DATA		1. PRIVACY MARKING/CAVEAT (OF DOCUMENT) Unclassified	
2. TITLE The Prototype Automated Research Management System (ARMS)		3. SECURITY CLASSIFICATION (FOR UNCLASSIFIED REPORTS THAT ARE LIMITED RELEASE USE (L) NEXT TO DOCUMENT CLASSIFICATION) Document　(U) Title　(U) Abstract　(U)	
4. AUTHOR(S) Paul Prekop, Mark Burnett and Chris Chapman		5. CORPORATE AUTHOR Information Sciences Laboratory PO Box 1500 Edinburgh South Australia 5111 Australia	

6a. DSTO NUMBER DSTO-TR-0540	6b. AR NUMBER AR-013-011	6c. TYPE OF REPORT Technical Note	7. DOCUMENT DATE February 2004
8. FILE NUMBER E9505/28/23	9. TASK NUMBER STR 02/124	10. TASK SPONSOR MSCIS	11. NO. OF PAGES 25	12. NO. OF REFERENCES 1

13. URL on the World Wide Web http://www.dsto.defence.gov.au/corporate/reports/DSTO-TN-0540.pdf	14. RELEASE AUTHORITY Chief, Command and Control Division

15. SECONDARY RELEASE STATEMENT OF THIS DOCUMENT *Approved for public release*   OVERSEAS ENQUIRIES OUTSIDE STATED LIMITATIONS SHOULD BE REFERRED THROUGH DOCUMENT EXCHANGE, PO BOX 1500, EDINBURGH, SA 5111
16. DELIBERATE ANNOUNCEMENT No Limitations

17. CITATION IN OTHER DOCUMENTS　　　　　　Yes
18. DEFTEST DESCRIPTORS Knowledge Management, User Needs, Databases, and Defence Science and Technology Organisation

19. ABSTRACT
Automated Research Management System (ARMS) is a knowledge management application designed to address many of the knowledge management problems identified by SmartWays and FASSP's Knowledge Management Review. ARMS supports knowledge management by recording and exposing the knowledge and expertise of DSTO Staff, providing organisation-wide methods for S&T Staff to find and interact with other staff with similar or complementary skills, experiences or interests, and by providing a coherent and organisation-wide R&D corporate memory of current and past DSTO work. This report presents a set of detailed use-cases for the ARMS prototype, and the piloting process that will be used to test and evaluate it.